BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

DOCKET NO. 2002-395-E - ORDER NO. 2003-373

JULY 14, 2003

IN RE:	Application of Carolina Power & Light Company for a Certificate of Environmental Compatibility and Public Convenience and Necessity for the Construction and Operation of a New 230-kV Transmission Line from its Darlington County Generating Plant Switchyard near Hartsville, SC to its Florence 230-kV Substation near Florence, SC.	)))))))))	ORDER GRANTING CERTIFICATE

I. INTRODUCTION

This matter comes before the Public Service Commission of South Carolina (the Commission) on the December 3, 2002 Application of Carolina Power & Light Company (CP&L or the Company) for a Certificate of Environmental Compatibility and Public Convenience and Necessity, as required under the Utility Facility Siting and Environmental Protection Act, S.C. Code Ann. Section 58-33-10, et seq. (1976) and (Supp. 2002) (the Siting Act), for the proposed construction and operation of the 230kV transmission line from CP&L's Darlington County Generating Plant 230 kV switchyard near Hartsville to CP&L's Florence transmission substation near Florence in Darlington, Lee, and Florence Counties in South Carolina. The Application states that this transmission line is needed due to expectation that the projected electric load in the Darlington/Florence County area will exceed system capability under peak load contingency conditions by mid-2005. CP&L states that construction of this line will help

ensure a continued reliable supply of electric service to homes and businesses. The transmission facilities as proposed in the Application would extend a distance of approximately 37 miles.

Prior to the submission of its Application, CP&L published notice of its intent to apply for a Certificate under the Siting Act, as the provisions of Section 58-33-120(3) require. In addition, the Application included certification that CP&L had served a copy of the Application on those governmental officials and such other persons as Section 58-33-120(2) of the Siting Act requires.

Upon receipt of CP&L's Application, the Commission's Executive Director required the Company to publish a prepared Notice of Filing and Hearing which described the nature of the Application and advised all interested parties of the manner in which they might intervene or otherwise participate in the proceeding. CP&L submitted an affidavit which demonstrated compliance with the Executive Director's instructions. Petitions to Intervene were filed by Robert James and Ellen James Ramsburgh and the Consumer Advocate for the State of South Carolina (the Consumer Advocate). Statutory parties are the South Carolina Department of Health and Environmental Control (DHEC), the South Carolina Department of Natural Resources and the South Carolina Department of Parks, Recreation, and Tourism (the statutory parties).

On February 20, 2003, at 10:30 AM, in accordance with Section 58-33-130 of the Siting Act and with the Commission's Rules of Practice and Procedure, the Commission conducted an evidentiary hearing in this proceeding. CP&L was represented by Len S. Anthony, Esquire, and William F. Austin, Esquire. Robert James and Ellen James

Ramsburgh were represented by William L. Want, Esquire. The Consumer Advocate was represented by Hana Williamson, Esquire. The Commission Staff was represented by F. David Butler, General Counsel and Jeffrey M. Nelson, Staff Counsel. The statutory parties did not participate in the hearing.

CP&L presented the testimony of Steve Wilson, Mark Byrd and Kristi Wise. The Intervenor Robert James also testified. No witnesses were presented by the Consumer Advocate, or by the Commission Staff. Two members of the public were also heard on the matter.

II. SUMMARY OF TESTIMONY

Mark Byrd

Mark Byrd, Manager of Transmission Planning for CP&L, testified. Byrd is responsible for the long-range infrastructure plans for CP&L. Byrd addressed the need and necessity for the construction of a new 230-kV transmission line originating at the Darlington County Plant, located along the western shore of Lake Robinson, northwest of Hartsville, South Carolina, and connecting to the existing transmission system at CP&L's Florence Substation, located in northern Florence, South Carolina. Byrd described the transmission planning process at CP&L.

Byrd testified that CP&L's continuous assessment of electric system requirements has identified the need for a transmission project to help ensure a continued reliable supply of electric service to homes and businesses. Byrd noted that projected electric load in the Darlington County/Florence County area is expected to exceed system capability under peak contingency conditions by mid-2005. Additional constraints on the existing

electric transmission system in the area, coupled with significant customer growth in population and electric usage, have prompted the need for CP&L to upgrade its transmission facilities in this area, according to Byrd. Certain studies performed by the Company showed that during an outage of Brunswick Units 1 and 2, if the Robinson-Florence 230-kV line is opened, the Robinson-South Carolina Public Service Authority (SCPCA) Darlington 230-kV line will overload in 2005. Byrd then describes various other scenarios which result in overloaded lines. According to Byrd, the project before the Commission for approval will reduce various contingency loadings to acceptable values, allowing the Robinson/Darlington County generation complex to operate at full output. TR. at 39-40.

Byrd also noted that customer growth in population and electric usage is expected to place greater demands on the distribution system in the Darlington County/Florence County area. Load growth is projected to increase approximately two to three percent each year for the next ten years, according to Byrd. TR. 40-41.

In addition, Byrd explained that once it was established that the transmission system in the Darlington-Florence area would need enhancement by 2005 to continue to provide reliable electric service, studies were performed to evaluate proposed alternatives and to determine the optimum solution from among them. The transmission line as proposed in this proceeding turned out to be the best solution, according to Byrd. Byrd further testified that the proposed line is the most economical and will produce the greatest service reliability. Further, Byrd asserted that the public convenience and necessity require the construction of this transmission line. Byrd noted that in the absence

of this transmission line, CP&L will soon begin to experience overloads when the existing transmission lines are open with full generation. According to Byrd, the proposed 230-kV transmission line will reduce these contingency loadings to acceptable values, allowing the Robinson/Darlington generation complex to operate at full output. In addition, Byrd states that projected load growth and increased energy usage in the Darlington County/Florence County area contribute to the need for this transmission facility. TR. at 42.

Steve Wilson

Steve Wilson, a Project Manager in the Transmission Department of CP&L, also testified on behalf of the Company. Wilson explained how the Company's preferred route was selected and how public input was incorporated into the route selection process. Wilson also discussed the potential environmental impacts of the project and the mitigation techniques proposed by the Company to minimize the impacts. TR. 46-47. After establishing the study area, potential alternative routes were identified. Wilson noted that the objective was to identify routes connecting the Darlington County Plant to the Florence Substation while avoiding or minimizing impacts to both human and natural resources. Local, State, and Federal government agencies were contacted to obtain information relevant to the routing process. Homes and other features located near each potential route were identified during field reconnaissance in which all potential routes were assessed. If serious problems were identified along a route, adjustments to the route were made to minimize the potential impacts or the route was removed from consideration, according to Wilson. TR. at 49. Following the identification of potential

alternative routes, public input was solicited via public information meetings held by CP&L in May 2002 in the study area, and via information available on the CP&L project website. According to Wilson, the public participation program provided the public with an explanation of the need for the project and the opportunity to comment on the decision-making criteria to be used to select the preferred route. It also provided the public with a forum to ask questions and voice their opinion regarding the proposed routes. TR. at 50. Using the information collected from the public, field reconnaissance, agency contacts, and review of aerial photography and U.S.G.S. quadrangle maps, the study team quantified the social and environmental resources that would be impacted by each possible route. Ultimately, according to Wilson, a preferred route and alternate route for the proposed transmission line were identified, which the Company considered to have the least overall impacts of the alternatives studied. Id.

Wilson noted that the network of alternative routes considered consists of 42 individual line segments that can be combined to form 663 possible routes between the Darlington County Plant and the Florence Substation. Wilson then described the various alternatives, and, ultimately, the selected proposed route. TR. 51-53. According to Wilson, the selected route (denominated A6 and B25 in the Routing Study and Environmental Report) was chosen because it has the least overall impact to the human and natural environment. Wilson testified that impacts from construction of the preferred route are minimized because nearly half of the route follows existing pipeline and transmission line rights-of-way, reducing the amount of right-of-way to be acquired, and the route is relatively direct. TR. at 53. Wilson states that the preferred route impacts few

residences and businesses and no public facilities. No homes are within 100 feet of the route and three of the seven homes within 200 feet are located along existing transmission lines, where the homes are generally closer to the existing line than they would be to the new one. The preferred route also crosses some of the least agricultural land of all the routes, according to Wilson. Id. Further, Wilson stated that the selected route has the least overall environmental impacts. TR. at 54. According to Wilson, the preferred route parallels both existing transmission lines and gas pipelines, which reduces the required right-of-way and minimizes impacts to agricultural land, woodland and wetlands. Wilson states that the preferred route also has minimal residential impacts compared to most other routes. In addition, Wilson testified that CP&L has taken all reasonable steps to minimize the environmental impact of the project. TR. at 55.

Wilson noted that, once alternative routes were identified, they were evaluated for their overall impact to human resources and the natural environment. Scores were calculated for each route based on the potential impacts of that route relative to the potential impacts of the other routes considered. The preferred route, according to Wilson, received the lowest overall weighted score, with lowest being best, of all the proposed routes, indicating that it would have the least overall impact on the human and natural environment. TR. at 56.

Wilson testified that the proposed transmission project will conform to all applicable State and local laws and regulations. TR. at 56-57. Finally, Wilson stated that once Commission approval is attained, CP&L will notify the landowners affected by the new transmission line as well as those landowners who attended the public workshops of

the selection and approval of the route. CP&L will then begin acquiring easements from landowners, according to Wilson, and will work with them to identify adjustments to the route that will minimize impacts on each landowner's property, if possible. Clearing of the right-of-way will begin in early 2004, while construction is scheduled to begin in mid-2004. The line is scheduled to be in service by June 1, 2005. TR. at 57-58.

Robert James

The Intervenor Robert James testified. James testified that he and his sister Ellen James Ramsburgh own the Robert James house and farm in Darlington. James stated that he and Ms. Ramsburgh intervened because of the adverse impact that the proposed transmission line route would have on the house and farm. James stated that he and his sister believe that there are very important environmental factors, including historic factors, which CP&L did not take into account in selecting its route that goes across the intervenors' farm. TR. at 179.

James stated that CP&L indicated that his comments on environmental factors, including historic ones, would be considered in determining the location of the transmission line with respect to the Robert James house and farm. James noted that his sister informed CP&L in a letter of June 4, 2002 as follows: "The farmhouse has been a landmark on the Darlington-Florence Highway since the turn of the century." It was further stated that, "The farm is over one hundred years old...The house, included in several books on both Carolina architecture, is a notable one." James' lawyer also wrote CP&L with detailed information about the house and farm. He stated in an August 1, 2002 letter that the 1898 Robert James house is important to Darlington County because

it is almost totally unchanged and one of the best examples of houses of that period. In addition the attorney wrote that the house has statewide importance, because it is a significant example of the residential work of two influential and well-known South Carolina architects: Charles Coker Wilson and William Augustus Edwards. Also, the attorney's letter stated that the house is a notable example of a Greek Revival house, and "is distinguished by high quality of workmanship and materials, the amount and quality of interior woodwork, and good plan." The attorney further noted that "[t]he Robert James house and farm provide a welcome green space along the Florence-Darlington highway and a link to the area's historic past. Without it, the entire 10-mile stretch would be completely unrecognizable to all but the current generation." James also noted that a letter from the State Historic Preservation Office was written to CP&L concerning the transmission line proposal. Among other things, the letter stated that the house, and likely the farm surrounding it would be National Register-eligible. TR. at 180-182.

James stated a belief that CP&L never gave his information regarding the house and farm any serious consideration, either in a historic or environmental sense. Basically, the chosen route runs across the farm itself. CP&L stated that it did not have the information on the James house and farm prior to selecting the route. James challenged this assertion. TR. at 184.

James testified that the presence of the power line would detract from the historic quality of the property, even though the line would be more than 1,000 feet from the house. James noted that there is already a power line running across the farm, but states that this was installed when his father was very ill. James stated that since his father's

death in 1974, his sister and he have worked to maintain the historic and environmental quality of the house and farm as their father and their mother wished. TR. at 186. James further testified that placing this additional and much bigger power line across the farm and within clear view of the house would detract substantially from the historic and environmental quality of the house and farm. James noted that the existing line is wooden, fifty-five feet high and has a right-of-way of one-hundred yards;[1] the new power line would be twice that height, made of steel and increase the right-of-way to a total of one hundred and seventy feet. TR. at 187. James noted further that the selected route using section 32 is longer than the more suitable alternative route, section 33.

James stated a belief that the Commission should order CP&L to choose a route that does not go across the Robert James farm because of the negative impact it would have on the historic property and because the transmission line would mar the only green space left on the Florence-Darlington Highway. Alternatively, James asked the Commission to order CP&L to engage in another route selection process and to take into account the information that the State Historic Preservation Office and James and Ms. Ramsburgh provided. TR. at 188.

Steve Wilson-Rebuttal

Steve Wilson testified that upon receiving Robert James' testimony, that he and another CP&L employee drove to Charleston to meet with Mr. James and his attorney to try and address his concerns. Wilson noted that a modification was discussed which would result in the new line not crossing the James' property. Although CP&L had not

[1] We believe that the witness actually intended to indicate one hundred "feet" instead of one hundred "yards" as the right-of-way distance.

received final approval from the two landowners concerning the alternate route, Wilson stated a belief that this modification would allow CP&L to avoid the James' property completely. TR. at 59-60. Wilson stated that Mr. James was unwilling to work with the Company to allow CP&L to cross the James property at any point. TR. at 60.

Kristi Wise-Rebuttal

Kristi Wise, a Staff Environmental Scientist for Burns and McDonnell, filed rebuttal testimony. Ms. Wise testified that if a known National Register-listed or eligible site were present near a proposed route and it seemed likely that an adverse impact would result, the team choosing the route would make every attempt to either avoid the site or minimize potential impacts by placing the line along existing transmission corridors or other existing infrastructure in the vicinity. CP&L did consider the impacts of cultural resources in the route development and selection process, according to Ms. Wise. However, Ms. Wise stated that the James house and farm were not known entities in the South Carolina Institute of Archaeology and Anthropology's records, so they were not considered as historic properties in the initial identification of the preferred route or in the scoring process. TR. at 69-70. However, Ms. Wise also states that even if CP&L had known about the historic nature of the James house and farm, that it would not have changed the proposed route. According to Ms. Wise, the preferred route minimizes the overall impact to the area in question and CP&L located the line in a manner that mitigated the impact to the James property in a number of ways. Ms. Wise noted that the new transmission line would be parallel to an existing transmission line that already crosses the farm. Second, the new line would be on the far side of the existing

transmission line away from the house. Third, the new line would be approximately 1,200 feet from the house. Fourth, the new line would be screened from the house by trees surrounding the house, and a backdrop of trees east of the transmission corridor reduces the visibility of the transmission corridor from the house, according to Ms. Wise. Ms. Wise further noted that these are the identical actions that the Company would have taken had the James property actually been designated as historic at the time the route selection process was done. TR. at 70-71. Finally, Ms. Wise noted that the preferred route is the best route CP&L could have selected because it had the least overall impacts based on the information used to evaluate the routes and the route selection process. According to Ms. Wise, the selection was made objectively using the selection process to compare the overall impacts to the natural and human environment for numerous route options. TR. at 71.

Robert James-Surrebuttal

Mr. James filed surrebuttal testimony. First, James took issue with the statement by CP&L witness Wilson in his rebuttal testimony that James was unwilling to work with the Company. James noted that, in the meeting, the same issues were reiterated with the Company that had already been presented. TR. at 191. James stated that the modification proposed by CP&L would cause more detraction from the greenway area, since the line in question would then run a full mile along the public highway. James noted that he indicated to CP&L at the meeting that it should choose its original alternative proposal, which includes segment 33. TR. 192-193. James also replied to the rebuttal testimony of Kristi Wise. With regard to Ms. Wise's statement that the line would be approximately

1200 feet from the house, James notes that this is no different from CP&L's stated criteria of keeping a transmission line further than 1,000 feet from a house, and that this was nothing outside of CP&L's normal criteria. Further, regarding obstruction of the view of the line by trees, James testified that trees would not screen the line in this case. TR. at 194-195.

III. FINDINGS OF FACT

1. Carolina Power & Light proposes to construct, operate, and maintain a new 230 kV transmission line, approximately 37 miles long, extending southeast from CP&L's Darlington County Plant to an existing 230 kV substation within the northern city limits of Florence, South Carolina.

2. CP&L provided public notice of its intent to file the Application for the project transmission line as required by S.C. Code Ann. Section 58-33-120(2). Further, CP&L provided evidence of public notice of the project Application by publication as required by S.C. Code Ann. Section 58-33-120(3). Following the actual filing of the Application, CP&L filed with the Commission evidence of publication of a Commission prepared Notice of Filing and Hearing that advised the public of the filing of the Application, of the manner and time to file pleadings to become a party in the proceedings, and of the date of the hearing on the Application. CP&L and the Commission have satisfied all statutory requirements for notice and opportunity for hearing as required by the Siting Act.

3. The Company demonstrated various scenarios which illustrated overloads if a new transmission line is not built. Also, customer growth in population and electric

usage is expected to place greater demands on the distribution system in the Darlington County/Florence County area. Load growth is projected to increase approximately two to three percent each year for the next ten years. CP&L has established the basis for the need for the transmission line, no matter which route is approved.

4. There is a major controversy as to the route of the new transmission line. CP&L denominated its preferred route as A6 and B25. Company witness Wilson testified that this route was chosen because it has the least overall impacts to the human and natural environment of the alternatives studied. Intervenor James objected to the preferred route, stating that it infringed on the Robert James house and farm, an area of historic significance, and also on the only green space left on the Florence-Darlington Highway. James therefore objects to the preferred route on historic and environmental grounds. James stated a preference for the B28 alternate route, which avoids the Robert James house and farm.

5. Using the route for the transmission line as comprised of Route A6 and B28 as approved herein, the Commission finds the impact of the new transmission line upon the environment to be justified, considering the state of available technology and the nature and economics of the various alternatives and other pertinent considerations.

6. The new transmission line, comprised of Routes A6 and B28 as approved herein, will best serve the interests of system economy and reliability at a lower cost than the preferred route.

7. There is a reasonable assurance that the proposed transmission line will conform to applicable State and local laws and regulations.

8. The public convenience and necessity require the construction of the new transmission line.

9. The alternate A6-B28 route is approved for the proposed transmission line. The Company's late-filed Hearing Exhibit 4 supports this conclusion. The late-filed Hearing Exhibit 4 consisted of the cost estimates for constructing the top five "A" routes and the top ten "B" routes based on the environmental and cultural factors utilized by CP&L. Of the fourteen factors for which a comparison is made between the preferred and the alternate route, the alternate route is the superior choice in a majority of the factors. Specifically, the alternate route is shorter in length and requires less new right-of-way. Further, there are fewer businesses within 200 feet of the alternate route. Also, the alternate route crosses fewer acres of woodlands and wetlands. In addition, the total estimated line cost for the preferred route is $15,025,893 and the total estimated line cost for the alternate route is $13,987,639, a difference of more than a million dollars. Consequently, the alternate B28 route is preferable to the preferred B25 route.

10. The requisite Certificate is granted for the transmission line following the alternate A6-B28 route.

IV. CONCLUSIONS OF LAW AND DISCUSSION

1. S.C. Code Ann Section 58-33-160 provides

> (1) The Commission shall render a decision upon the record either granting or denying the application as filed, or granting it upon such terms, conditions or modifications of the construction, operation or maintenance of the major utility facility as the Commission may deem appropriate; such conditions shall be as determined by the applicable State agency having jurisdiction or authority under statutes, rules, regulations or standards promulgated thereunder, and

the conditions shall become a part of the certificate. The Commission may not grant a certificate for the construction, operation and maintenance of a major utility facility, either as proposed or as modified by the Commission, unless it shall find and determine:

(a) The basis of the need for the facility.

(b) The nature of the probable environmental impact.

(c) That the impact of the facility upon the environment is justified, considering the state of available technology and the nature and economics of the various alternatives and other pertinent considerations.

(d) That the facilities will serve the interests of system economy and reliability.

(e) That there is a reasonable assurance that the proposed facility will conform to applicable State and local laws and regulations issued thereunder, including any allowable variance provisions therein, except that the Commission may refuse to apply any local law or local regulation if it finds that, as applied to the proposed facility, such law or regulation is unreasonably restrictive in view of the existing technology, or of factors of cost or economics or of the needs of consumers whether located inside or outside of the directly affected government subdivisions.

(f) That public convenience and necessity require the construction of the facility.

(2) If the Commission determines that the location of all or a part of the proposed facility should be modified, it may condition its certificate upon such modification, provided that the municipalities and persons residing therein affected by the modification shall have been given reasonable notice.

(3) A copy of the decision and any opinion shall be served by the Commission upon each party.

(Emphasis added.)

2. S.C. Code Ann. Section 58-33-160 provides the Commission with the authority to grant an application as filed, grant the application upon such terms,

conditions or modifications of the construction, operation or maintenance of the project as the Commission deems appropriate, or deny the application. Should the Commission entertain modification of the location of all or part of the project, the Commission, pursuant to S.C. Code Ann. Section 58-33-160(2), must find and conclude "that the municipalities and persons residing therein affected by the modification shall have been given reasonable notice." S.C. Code Ann. Section 58-33-160(2) (1976).

On December 3, 2002, CP&L filed with the Commission the Application which is the subject of the instant case. As required by statute, the Application contained, *inter alia,* a description of the facility to be built, a summary of all studies which have been made by or for the applicant of the environmental impact of the facility, and a statement of the need for the facility. The Routing Study and Environmental Report, included as Exhibit B to the Application, provided details of the environmental studies and analysis of proposed and alternate routes for the project. In its Application, CP&L also provided evidence that it had complied with the notice requirements of S.C. Code Ann. Section 58-33-120(2) (1976) by providing proof of service that CP&L caused a copy of the Application to be served on the chief executive officer of each municipality and the head of each State and local government agency charged with the duty of protecting the environment of planning land use in the area in the county in which any portion of the project is to be located. See, Application, Exhibit C. With the Application, CP&L also provided proof of public notice by publication to persons residing in the municipalities entitled to receive notice as required by S.C. Code Ann. Section 58-33-120(3) (1976). See, Application, Exhibit D. Further, subsequent to filing the Application of the proposed

project, CP&L published, as directed by the Commission's Executive Director, a Notice of Filing and Hearing in newspapers of general circulation in the area of the proposed project. This Notice of Filing and Hearing advised the public of the project Application, of the manner and time in which to file pleadings to become a party in the proceeding, and of the actual hearing date on the Application.

We therefore conclude that the project Application was sufficiently noticed to the public and that reasonable notice was afforded to the public of the Application pending before the Commission. Therefore, we conclude that we may consider the proposed route, as well as the alternate routes, of the project as contained in the Application and the evidence from the hearing.

3. The Company has demonstrated the basis of the need for the new transmission line. The testimony of Mark Byrd provides the requisite evidence. Byrd testified that CP&L's continuous assessment of electric system requirements has identified the need for a transmission project to help ensure a continued reliable supply of electric service to homes and businesses. Byrd pointed out that projected electric load in the Darlington County/Florence County area is expected to exceed system capability under peak contingency conditions by mid-2005. Additional constraints on the existing electric transmission system in the area, coupled with significant customer growth in population and electric usage, have prompted the need for CP&L to upgrade its transmission facilities in the area. The Company performed certain studies which showed overload conditions without construction of a new transmission line. The proposed project will reduce contingency loadings on existing transmission lines to acceptable

levels, will improve the power quality and reliability in the area, and will reduce the frequency and duration of potential power outages. Byrd also points to increased growth in customer population and growth in electric usage. Byrd stated that load growth is projected to increase approximately two to three percent each year for the next ten years. TR. at 39-41. Thus, the need for the new transmission line is apparent. No party challenged the need for the line.

4. The nature of the probable environmental impact is minimal. The testimony of Company witness Steve Wilson indicates that the proposed project will have minimal effects on natural resources. According to the testimony, construction and operation of the transmission line is not projected to result in any significant impact to the existing topography or surface water features. Some loss of vegetation would occur due to clearing of right-of-way; however, damaged areas will be reseeded following disturbance. There are only three federally endangered plant species identified in the project area. The Company will continue to consult with the US Fish and Wildlife Service as well as State agencies concerning surveys and mitigation. CP&L has acknowledged correspondence received by the Commission from the South Carolina Department of Natural Resources (DNR) and the Company agreed to the recommendations of DNR concerning the project.

The DNR recommendations, which appear in Hearing Exhibit 2, are hereby adopted. These are as follows:

1) Transmission line construction must be accomplished in existing disturbance corridors where practicable. Upon completion, pre-construction contours

must be restored along transmission line right-of-ways and all disturbed areas must be permanently stabilized.

2) To the greatest extent practicable, clearing of riparian vegetation within wetlands and waters of the U.S. must be conducted manually and low growing, woody vegetation and shrubs must be left intact to maintain stream bank stability and reduce erosion. Where practicable, right-of-ways through and adjacent to wetlands should be maintained by hand clearing rather than with chemicals to reduce the potential for contamination of downstream aquatic resources.

3) Prior to beginning any land disturbing activity, appropriate erosion control measures such as silt fences, silt barriers or other devices, must be placed between the disturbed area and the affected waterway or wetland; and maintained in a functioning capacity until the area is permanently stabilized.

4) All necessary measures must be taken to prevent oil, tar, trash and other pollutants from entering the adjacent offsite areas.

5) Once the project is initiated, it must be carried to completion in an expeditious manner in order to minimize the period of disturbance to the environment.

6) The proposed project must be in compliance with any applicable local flood damage prevention ordinances.

Further, the project will be designed to span or avoid wetland areas where possible, and any possible impacts to wetlands would be temporary in nature. Impacts to wildlife may occur, but would also be temporary in nature. TR. at 46-58. CP&L also employed and will employ certain other measures to minimize the environmental impact

of the project. The transmission line clearing and construction activities are designed to minimize environmental impacts. Trees in wet areas will be hand cut and structures will be located outside of these areas as much as possible. The root mat within the right-of-way will not be disturbed. All clearing, construction and maintenance will be completed in accordance with Best Management Practices published by the South Carolina Forestry Commission. Visual impacts will be minimized by using a single pole made of weathering steel that will blend in with the surrounding trees, and by paralleling other existing transmission lines in the area. TR. at 55-56.

In addition, we conclude that employing alternate route A6-B28 will further reduce environmental impact. According to the testimony of Intervenor Robert James, CP&L's preferred route of A6-B25 would mar the only green space left on the Florence-Darlington Highway. TR. at 188. We believe that this factor is a significant environmental factor to mandate changing the route of the transmission line from the preferred A6-B25 route to the alternative A6-B28 route. We have seen no evidence indicating that the A6-B28 route either would mar or interfere with this green space or otherwise adversely impact the environment.

5. Using the route for the transmission line as comprised of Route A6 and B28 as approved herein, the Commission finds and concludes the impact of the new transmission line upon the environment to be justified, considering the state of available technology and the nature and economics of the various alternatives and other pertinent considerations.

The record indicates that the transmission studies performed to evaluate alternatives to the proposed transmission line project resulted in estimated costs three to four times greater than the proposed project. Further, if the proposed transmission line is not approved, the alternative requires the rebuilding of three other transmission lines. Thus, construction impacts associated with rebuilding the existing transmission lines would affect a much larger area then the proposed project.

In determining whether the impact of the new transmission line project itself on the environment is justified, an analysis of the preferred route versus the alternate routes must also be undertaken. CP&L offers its preferred route comprised of Route A6 and Route B25, while Intervenor James objects to the use of Route B25 and suggests Route B28 instead. No party challenged use of the A6 Route. As described more fully herein, a review of the evaluation criteria utilized by CP&L in rating and ranking possible routes supports the use of preferred RouteA6 and alternate Route B28. See, Hearing Exhibit 4.

To evaluate different routes, CP&L utilized Burns & McDonnell to assist in the route selection. After identifying routes that connected the Darlington County Plant to the Florence Substation and attempting to avoid or minimize impacts to both human and natural resources, the study team quantified the social and environmental resources that could be impacted by each possible route. Geographic information system ("GIS") software was utilized for route selection and impact analysis. Public input was used to develop the basis for the ranking of the evaluation criteria. Based upon the spatial analysis conducted utilizing the GIS, a "raw" score was computed for each line segment based on the distribution of scores for each criterion. CP&L then selected a weighting

factor for each criterion and computed a final weighted score for each line segment. The final score was the product of the "raw" score and weight for each criterion. Based upon the route ranking and weighting, CP&L chose Route A6 as the preferred "A" route and B25 as the preferred "B" route and A16 as the alternate "A" route with B28 as the alternate "B" route.

While the proposed B25 route received the best overall score in the ranking, B28 scored second in the ranking.[2] In offering B28 as an alternate "B" route, CP&L stated "[b]ecause Route B28 ranked second and there were no significant constraints along this route to warrant selection of one of the other top routes, [Route B28] was selected as the alternate [route] to the preferred [route]." Application, Exhibit B, p. 4-21. In addition and in support of offering B28 as an alternate route, CP&L stated that Route B28 "is the shortest of the top routes (21.8 miles) and impacts only one residence more than the preferred [route], few businesses and public facilities, and relatively low woodland and wetland acres and perennial streams." *Id.*; also See, Hearing Exhibit 4. While CP&L also noted that the visibility of B28 had the highest visibility rating of the top scoring routes at 301.4, CP&L further pointed out that the visibility scoring of B28 was still less than the average for all the routes. *Id.*

In comparing B28 with B25 for the fourteen categories used in the evaluation, B28 has a better rating in 6 of the categories, including "Total Length" (115,400 feet for

[2] All "A" routes and "B" routes are shown in ranked, or sorted, order from highest to lowest in Table 4-8 on page 4-14 of Exhibit B of the Application. Additionally, Hearing Exhibit 4 depicts, in ranked, or sorted order, the top five, or highest scoring, "A" routes and the top ten, or highest scoring, "B" routes. These routes receiving the highest, or best, overall scores as ranked in Table 4-8 and in Hearing Exhibit 4 may be referred to herein as "top routes" or "top scoring routes". The ranking or sorting of the routes as shown in Table 4-14 and in Hearing Exhibit 4 also lead to the references of B25 as receiving the best overall score and of B28 as scoring second.

B28 vs. 124,050 feet for B25), "New Right of Way" (247.6 acres for B28 vs. 249.2 for B25), "Length Not Parallel Existing Gas Pipelines" (113,450 feet for B28 vs. 124,050 feet for B25), "Businesses Within 200 Feet" (1 on B28 vs. 7 on B25), "Woodland Crossed" (100.0 acres for B28 vs. 105.2 acres for B25), and "Wetlands Crossed" (43.6 acres for B28 vs. 49.5 acres for B25). Route B28 had lower ratings in the categories of "Length Not Parallel Existing Transmission" (92,800 feet for B28 vs. 72,459 feet for B25), "Residences Within 200 Feet" (7 on B28 vs. 6 on B25), "Cleared Agricultural Lands Crossed" (144.7 acres for B28 vs. 141.9 acres for B25), and "Visibility" rating (301.4 for B28 vs. 276.6 for B25). Both routes had the same rating in the categories of "Residences Within 100 Feet" (0), "Public Facilities Within 200 Feet" (0), "Perennial Streams Crossed" (6), and "Heavy Angles" (24). From this data, it appears that Route B28 would impact a total of 12.7 acres less than Route B25 in the categories of "New Right of Way," "Woodland Crossed," and Wetlands Crossed," while impacting 2.8 acres more than Route B25 in the category of "Cleared Agricultural land Crossed." Additionally, Route B28 has one more residence in the category "Residences Within 200 Feet" than does Route B25, but B28 has 6 fewer businesses in the category "Businesses Within 200 Feet." Thus we must determine if one residence within 200 feet of the transmission line outweighs the environmental impacts of crossing and impacting more acreage overall and the impacts associated with a historic property, plus the additional construction costs estimated at approximately one million dollars.

In determining whether the impact of the transmission line upon the environment is justified, we must analyze the evidence before us. This evidence consists of the CP&L

Routing Study and Environmental Report included with the Application, Hearing Exhibit No. 4, and the testimony of all the witnesses, including the testimony regarding the historical significance of the James property as a National Register-eligible site and the ecological significance of the James property and the other property along Highway 52 as the remaining "green way" along the Florence-Darlington highway. The evidence indicates that a portion of the public believes that the remaining "green way" along Florence-Darlington Highway (or Highway 52) is ecologically important. We cannot disagree with this assessment of the Intervenor. There is no evidence to the contrary that the green way along the Florence-Darlington Highway is not the last remaining such green area as offered by the Intervenor.

While the evidence shows that alternate Route B28 has one more residence within 200 feet than does Route B25, it also shows that Route B28 has 6 fewer businesses than does B25. While the evidence quantifies residences and businesses within a buffer of two hundred feet of the placement of the transmission line, the record contains no evidence of an impact that the transmission line would have on those residences or businesses. The only suggestion of an impact is where the Routing Study and Environmental Report indicated that public input ranked "Maximize Distance from Residences" as the second highest concern. Application, Exhibit B, pp. 4-4 and 4-5. Yet it should be noted that no criterion in the evaluation was included for historic site information, even though CP&L included a consideration regarding historic sites on the questionnaire provided to the

public for comment and in fact received comment on historic resource[3]. Compare Application, Exhibit B, pp. 4-11 through 4-14 and Exhibit B, Appendix B, Project Questionnaire and Response Totals. Cost, while not used in the Routing Study and Environmental Report, also favors Route 28. The estimated price of the CP&L preferred route is $15,025,893 while the estimated price of the alternative route of A6-B28 is $13,987,639. See Hearing Exhibit 4. Route B28 also requires fewer tangent structures than does Route B25, with B28 requiring 175 tangent structures and B25 requiring 188 tangent structures. See, Hearing Exhibit 4.

We further find the fact that the James house and farm are National Register-eligible to be significant in our determination. According to the Routing Study and Environmental Report, one reason for eliminating routes utilizing Segment 28[4] was "[t]hough not reflected in the data analysis, Segment 28 also crossed 26,850 feet of a National Register-listed historic plantation where the route parallels the existing Robinson Plant to Florence 230 kV transmission line." Application, Exhibit B, p. 4-18. We find no compelling reason to discount the historical significance of the National Register-eligible James house and farm and to treat the James property entirely different

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[3] The consideration on the questionnaire related to historic sites was "(d)" on the "Line Routing Considerations" section and was worded as "Maximize distance from historic sites." The questionnaire listed fourteen considerations for citizens to rank in order of importance from 1 to 14. Weighted responses for the consideration for "Maximize distance to historic sites" ranked eighth out of the fourteen and scored higher than "Minimize length through wetlands," "Maximize distance from businesses," and "Minimize number of stream/river crossings." The considerations of "Minimize length through wetlands," "Maximize distance from businesses," and "Minimize number of stream/river crossings all received criteria in the final analysis while "Maximize distance from historic sites" did not receive a criterion in the final analysis.

[4] Each Route is comprised of numbered "segments." CP&L eliminated routes B1 through B11 and Route B24 for various reasons stated in the Routing Study and Environmental Report. Both Routes B1 and B24 contained Segment 28 which crossed the National Register-listed historic plantation. While other factors were important considerations in deciding not to use these routes, including length and greater impact on residences and public facilities, CP&L nonetheless stated that the fact that Segment 28 crossed the National Register-listed plantation was a reason for eliminating from consideration the routes using Segment 28.

than the historic plantation on Segment 28. As CP&L eliminated Segment 28 from consideration due in part to the National Register-listed plantation and in light of the fact that there is a very close alternative that can be used other than the segment that crosses the James property, we find the National Register-eligible James property should receive the same consideration for historic preservation. Affording this treatment to the James property is consistent with the attempted quantification of social and environmental resources to avoid and minimize impacts on human and natural resources employed by CP&L's own study team.

Route B28 and Route B25 are both composed of 10 segments, as delineated on the maps included in the Routing Study. The first six segments of each of these two routes are identical. The last four segments of each route differ, with Route 25 crossing the historical James property and the green way along the Florence-Darlington Highway and with Route 28 avoiding the James property and the green way along the Florence-Darlington Highway. Given the closeness is the scoring of the two routes as evidenced by the fourteen criteria used in the Routing Study as listed above[5], we find that we must look at the evidence presented by the Intervenor to determine whether the nature of the environmental impact is justified. As Route B28 neither impacts the green way along the Florence-Darlington Highway nor disturbs the historical significance of the James property, we hereby find that Route B28 impacts the environment to a lesser degree than

[5] According to the Routing Study, Route B25 received a Total "z-score" of -73.6, while Route B28 received a Total "z-score" of -64.6. Application, Exhibit B, p. 4-14. In CP&L's Routing Study, the lower "z-score," or a higher negative score, indicates a more preferable route. For all of the "B" routes, the Total "Z-scores" ranged from -73.6 to 143.8. Application, Exhibit B, Table 4-8, p. 4-14. For the top ten "B" routes, the Total "z-scores" ranged from -73.6 to -40.2. *Id.*

does Route B25. Therefore, we conclude and so find that Route B28 should be the "B" route along which the transmission line is to be built.

Accordingly, we conclude, when using Route A6-B28 as the route for the transmission line, the impact of the new transmission line upon the environment to be justified, considering the state of available technology and the nature and economics of the various alternatives and other pertinent considerations, when Route A6-B28.

6. The new transmission line will serve the interest of system economy and reliability. CP&L references customer growth and subsequent overload scenarios as a major factor in justifying that the transmission line will provide system reliability. According to the record, the proposed transmission line project will reduce contingency loadings on existing transmission lines to acceptable levels, will also improve the power quality and reliability in the area, and will reduce the frequency and duration of potential power outages. Further, without the transmission upgrade, CP&L asserts that load in the area would exceed the electric system capability in the near future.

According to CP&L witness Byrd, "[o]nce CP&L had established that the transmission system in the Darlington-Florence area of South Carolina would need enhancement by 2005 to continue to provide reliable electric service, studies were performed to evaluate proposed alternatives and to determine the optimum solution from among them." TR. at 41-42. According to Byrd, costs estimates for other methods or alternatives for enhancement to the transmission system were 3 to 4 times greater than the costs of the proposed transmission line. Id. Further, Byrd stated that the proposed

transmission line provided the best overall long-term system enhancement and was chosen as the optimum solution to the system's long-term needs.

In evaluating alternatives for enhancement to the CP&L transmission system, Byrd also noted that CP&L projects summer and winter peak seasons for every year for the next ten years. TR. at 108-110. CP&L models the Carolinas and neighboring systems as well, and also works cooperatively with neighboring systems to analyze the CP&L network under the contingencies that the North American Electric Reliability Council ("NERC") planning standards set forth. The most basic examples of contingencies planned for are for the ability to withstand the loss of a generator and another transmission line without creating overloads on the system. Id. Therefore, CP&L must plan, not only for local area load growth, but for system issues to ensure the reliability of the entire region. Id. at 110. According to Byrd, CP&L performed the necessary models to ensure not only its system reliability and economy but system reliability issues for the region. No party contested that the new transmission line would not serve system economy and reliability.

7. There is reasonable assurance that the proposed transmission line will conform to applicable State and local laws and regulations issued thereunder. TR. at 56-57. It should be stated that no party challenged conformance of the transmission line with applicable State or local law. CP&L witness Wilson stated that CP&L adheres to all State, Federal, and local laws and that CP&L works with some State and Federal agencies to obtain the appropriate permits and reviews in order to ensure that CP&L is complying

with the laws. The Commission can reasonably conclude from the record that there is a reasonable assurance that the proposed facility will conform with all applicable laws.

8. The public convenience and necessity require the construction of the facility. TR. at 42. Due to the established need and the necessity of the proposed line for CP&L to continue to provide reliable service to its service area, the Commission can conclude that the public convenience and necessity require the construction of the herein approved transmission line. We also believe and hold that the public convenience and necessity require the use of the alternate route denominated A6-B28. Clearly, the alternate route avoids the Robert James house and farm, which we believe serves the public convenience, considering the apparent historical and environmental significance of the property in that the property is part of the "green way" or the only remaining green space on the Florence-Darlington highway. We believe that the alternate route for the transmission line will serve a better public purpose than the preferred route, in that it will avoid productive agricultural farmland, a farmhouse of potential historic significance, and significant green space on the Florence-Darlington Highway. See testimony of John Boyd and Linda Bruton, TR. at 7 and 13. See also testimony of Robert James; TR., beginning at 177.

9. The Routing Study and Environmental Report presented in this case shall not be precedential in any future siting case. While the Application, including the Routing Study and Environmental Report, is sufficient to justify the siting of the transmission line approved by this Commission in the instant case, each siting

Application must be considered on a case by case basis and the studies reported to the Commission in the instant proceeding hold no precedential value to future siting cases.

10. The requested certificate should be granted for the 230 kV line following the alternate route (A6-B28), since CP&L has satisfied all of the statutory requirements found in S.C. Code Ann. Section 58-33-160 (1976).

IT IS THEREFORE ORDERED THAT:

1. The Application of CP&L for a Certificate of Environmental Compatibility and Public Convenience and Necessity be and hereby is, approved, and the Certificate is granted for the line following the alternate route (A6-B28).

2. This Order shall remain in full force and effect until further Order of the Commission.

BY ORDER OF THE COMMISSION:

Mignon L. Clyburn, Chairman

ATTEST:

Gary E. Walsh, Executive Director

(SEAL)

Concurring Opinion of Commissioner James Blake Atkins

Transmission Adequacy

Transmission adequacy and the reliability of the bulk-electricity system, as well as transmission line siting, are important concerns of state commissions across the United States. During the past two years, considerable national attention has been focused on transmission adequacy and reliability, or the theorized lack thereof. This attention has manifested itself in numerous regulatory and policy initiatives such as the push to implement regional transmission organizations (RTOs), the Federal Energy Regulatory Commission's (FERC) NOPR on Standard Market Design, and the U.S. Department of Energy's (DOE) National Grid Study.

One of the most argued adequacy issues has dealt with the transfer capacity of existing transmission lines, and the ability (or inability) to meet both native load and wholesale market transactions within and between interconnects. Under our vertically-integrated utility structure in the South, it should be abundantly clear that transmission adequacy and security for native load can not be separated from "viable" wholesale markets which provide sales to our incumbent utilities. Nor can such adequacy and security be separated from the ability of our incumbent utilities to sell excess power to wholesale markets on transmission lines owned by the incumbent and other adjacent transmission-owning companies.

In testimony before this Commission, CP&L provided sparse evidence regarding the changes to adequacy, reliability and security, on either its own transmission system or on neighboring systems, which will result from construction and operation of the

proposed 230 kv transmission line. Both written and verbal testimony by Mr. Byrd generally addressed the issue stating that studies had been conducted regarding various contingencies. While a description of the outcome of these studies was in CP&L's testimony, the actual transmission study which characterized and/or quantified the stability, power flow or transfer capacity implications of constructing and operating this line was not provided to this Commission. Although voting with the majority to issue a certificate, it is my opinion that the company's application was severely weakened because such a transmission study was not included. This concern was brought forward in my questions to Mr. Byrd during the hearing. TR. at 122-126. Further, it is questionable whether or not the docket in this case was in fact in order. Commission Order No. 2002-19, under the Findings of Fact, states that:

> 7. Further, the company provided, as a late filed exhibit, the transmission interconnection study on the transmission impacts of the proposed facility. This late filed exhibit was critical to the decision of the Commission, and a similar exhibit should be considered **a required component of all future siting applications** before this Commission.

It would appear that both CP&L and the Commission staff ignored the clear direction of Order No. 2002-19.

It is exceedingly difficult for this Commission to make informed decisions on such complicated transmission matters without adequate evidence in the record. In this case, the evidence presented by CP&L was inadequate to **fully** understand the implications of constructing and operating this line on the transmission system under (1) NERC contingency conditions, and (2) on operation of the transmission system under situations where no contingencies exist. The later scenario occurs the vast majority of the

time, and the Commission was presented with no evidence regarding power flow or transfer capacity during such times. Specifically, the effects that this line will have on increasing transfer capacities during situations where no contingencies exist are extremely important to the "system economy" of our incumbent utilities. This is not to argue against construction of this line because it would increase the transfer capacity. However, it is my opinion that the Commission must understand the **full** implications of its decisions. In this case, what the Commission failed to hear was what effect increasing transfer capacity could have on (1) the ability to make off-system purchases as a prudent alternative to self-generation, (2) future earnings of our incumbent utilities from off-system sales, (3) fuel-related costs associated with off-system purchases and sales, and (4) the future viability of wholesale markets and RTOs in the southeast and neighboring regions from "improved non-discriminatory" access to the grid. I believe it is contrary to the public interest to continue to ignore these "regional" public interest concerns when siting components of an incumbent's bulk electricity system within a single state.

Route Scoring Methodology

CP&L should be applauded for utilizing advanced geographic information system (GIS) software to score the numerous alternatives included in their application. By automating the spatial scoring analysis, numerous alternatives could be proposed and tested to determine their environmental and/or cultural "goodness" or impact. Additionally, the use of GIS minimizes the cost to critically evaluate theses numerous alternatives.

Although the GIS is a powerful analytical tool, the evaluation criteria and the scoring weights used in the company's application were inadequate to **properly** site the transmission line. Specifically, it is my opinion that the criteria failed to **adequately** quantify or characterize the environmental and/or cultural impacts. For example, what does the visibility criterion actually measure? Is the aesthetic quality of the towers included in this criterion?

Further, the scoring weights were completely arbitrary. As an example, consider CP&L's utilization of a weight of 15 for the proximity to residences. A weight of 15 was chosen because, of the 15 individual evaluation criteria examined, proximity was ranked the most important. The question must be asked is "is the proximity criterion actually 15 times more important than the last ranked criterion?" It my view, this conclusion is doubtful. What if 100 individual criterion were evaluated? Under CP&L's methodology, the highest ranked criterion would be 100 times more important than the last ranked criterion. Typical GIS based-scoring methodology uses unitized scores which value various criteria based on their percentage contribution to the overall score. It is my opinion that the Commission would greatly benefit from such an evaluation in future transmission siting cases.

The product of the scoring and weighting exercise was the calculation of raw z scores and final weighted z scores for each route. While z scores are a useful technique to analyze the alternatives, the meaning of z scores is difficult to determine and interpret. To understand the scoring outcomes, the Commission advisory staff extracted the "actual" measures for number of houses within the corridor, the area of wetlands impacted, etc.

By doing so, these "actual" measures were compared for each route alternative. This comparison allowed for a meaningful and straight-forward evaluation by the Commission. Coupled with the route cost estimates, provided as a late-filed exhibit (See. Hearing Exhibit 4), it was easy to understand that location of a residence within a route increased costs in the preferred alternative by approximately $1 million in construction costs. As with the weighting criteria above, the Commission would greatly benefit from the inclusion of such data in future transmission siting cases.

Public Input

As with the utilization of GIS techniques, CP&L is to be credited with going above and beyond what might normally be required in a transmission siting hearing regarding public input. However, one of the most troubling concerns of this public input process is that the full record of the inputs and the subtle discussions of the numerous public forums are not in the record of this case. Clearly, the outcomes were included in the application and the testimony, but understanding what the public meant by visibility, proximity and the other scoring criteria would have benefited the Commission's decision. In the alternative, the Commission could have held a public hearing(s) in the area to receive input. At this hearing, CP&L could have run their GIS siting tool, with various alternatives being offered from the public, Commission staff and the Commissioners. These alternatives, whether related to route path, evaluation criteria or weighting factors, could have been evaluated in real time. Such a process would have allowed the various siting issues to have been narrowed and robust consensus realized and importantly, for this input to have been placed directly on the record. Such innovative facilitation (dare I

say mediation) techniques have been utilized in other industry sectors and represent the "best practice" in such complicated, technical matters. In future siting proceedings, I would strongly encourage all parties, especially the Commission itself, to consider such a forward-thinking approach.